Research Article

Sexual Violence among Pregnant Women in Southwest Ethiopia: Community-Based Cross-Sectional Study Design

Lema Fikadu Wedajo*, Solomon Seyife Alemu, and Melese Adugna Tola

Department of Midwifery, Madda Walabu University College of Medicine and Health Sciences, Ethiopia

Abstract

Background: In low-socioeconomic countries, sexual violence is the most common gender-based problem that challenges women's daily lives and leads to adverse pregnancy outcomes.

Objectives: This study aimed to assess the prevalence of sexual violence and its associated factors among pregnant women in Mattu Town, Southwest Ethiopia.

Study Design: Community-based cross-sectional study

Methods: A simple random sampling method was employed among 414 pregnant women in Mattu Town from January 1 to 30, 2023. A face-to-face interviewer-administered structured questionnaire was used to collect the data. Binary and multivariable logistic regression analyses were performed to identify factors associated with sexual violence and are presented with adjusted odds ratios (aOR) and 95% confidence intervals (CI). The level of significance was declared at a p-value of less than 0.05.

Results: Of the 405 pregnant women included in the study, 23.46% had sexual violence (95% CI: 19.31%, 27.90%). Sexual violence was more likely among pregnant women who were married before the age of 18 (aOR:2.13; 95% CI: 1.12, 4.04), exposed to controlled behavior (aOR:8.42; 95% CI:9 4.40, 16.07), partner with secondary educational level (aOR:4.11; 95% CI:1.25, 13.59), partner daily khat use (aOR:2.79;95% CI:1.16, 6.68), and partner decision-making on household affairs (aOR:3.70; 95% CI:1.50, 9.32).

Conclusions: This study found that sexual violence among pregnant women is high. Early marriage, daily partner khat use, partner decision-making, control of behavior, and partner educational level were significantly associated factors identified among this population group.

INTRODUCTION

The World Health Organization (WHO) defines safe sexual practice as a state of physical, emotional, mental, and social well-being related to sexuality [1]. Violence against women is defined as an attempt related to gender that result in physical, sexual, or mental harm. In addition, it is coercion or arbitrary deprivation of liberty occurring in a public or private setting among women [2]. Sexual violence is the most common gender-based problem that affects women's daily lives. It includes any sexual act, attempts to satisfy a sexual need, or other forced sexual practices committed by any person, regardless of the relationship with the victims [3].

Pregnancy is an amazing gift of nature in a woman's life and is accompanied by changes in physiology, anatomy, and psychology [4]. Scholars have identified that pregnancy has an impact on the sexual life of a couple owing to hormonal, emotional, physiological, and anatomical changes [5,6]. In addition, the increase in gestational age increases the couple's stress about the possible complications of sexual intercourse [7]. The main problem regarding the sexual lives of couples in low socioeconomic countries is that they never explicitly decide on the problems that affect the expression of sexual desires and sexual behavior [1,8]. In most African countries, including Ethiopia, sexual issues are considered taboo; however, they have a negative impact on quality of life and a psychopathological impact on couples [9,10], which leads to sexual violence [11]. Different international organizations have stated that sexual violence is the most common human rights violation among women in the world [2,12].

A systematic review and meta-analysis of ten studies

revealed that 31% of pregnant women worldwide suffer from sexual violence [13]. The prevalence of sexual violence ranges from 13.2% to 36.6%, which is grossly underreported, especially in developing countries [14-16]. In Ethiopia, studies conducted among pregnant women in the Tigray region and Debre Markos town revealed a prevalence of sexual violence ranging from 15.5% to 19.4% during pregnancy [16,17].

This problem can lead to prenatal depression, insomnia, anxiety, social dysfunction, eating disorders, and substance abuse, which can affect pregnancy outcome [18]. Sexual violence leads to complications such as cervical incompetence, vaginal infection, sexually transmitted disease, and increased fear of childbirth [19], as well as negative pregnancy outcomes such as miscarriage, premature rupture of membranes, placental abruption, and neonatal death [20,21].

The studies identified factors associated with sexual violence, such as socioeconomic status, maternal education level, partner education level, partner alcohol use, and unplanned pregnancy [14,16,17]. Despite previous studies on violence against women, the prevalence and associated factors for sexual violence in pregnancy are less researched and sluggish behind its reduction in Ethiopia, particularly no study done in the southwest part of Ethiopia. Therefore, this study aimed to uncover the prevalence of sexual violence and its associated factors using the population of pregnant women in Mattu Town.

METHODS

Study Setting

The study was conducted in Mattu Town from January 1 to 30, 2023. Mattu Town is the administrative capital of the Iluababor Zone, 600 km from the capital city of Addis Ababa. This town has six kebele, Aba Saya, Gadisa Oda, Tabo, Kolokorma, Aba Mole, and Sor, with 42,496 households and a total population of 102,074. This town has one government referral hospital, one non-governmental hospital (Hamlin Fistula Center), one governmental health center, six health posts, and 28 private clinics. The town annually has 3,840 expected pregnancy and deliveries [22].

Study Design and Population

A community-based cross-sectional study design was used. All pregnant women in Mattu Town were the source population, while all pregnant women in Mattu Town during the data collection period were the study population.

Inclusion Criteria

All pregnant women in Mattu town were included in the study.

Exclusion Criteria

Pregnant women who lived in Mattu town for less than six months and were critically ill during data collection period were excluded from the study.

Sample Size Determination

The sample size was calculated using a single population proportion formula based on the proportion of sexual violence (19.4%) from a previous study conducted in Northwest Ethiopia [23]; based on assumptions of a 95% confidence level with 1.96 °of precision and a margin of error of 4%, as follows:

$$n = \frac{(z\alpha/2)^2(pq)}{d^2}, n = \frac{(1.96)^2(0.194 \times 0.806)}{(0.04)^2} \quad \text{n= 376.}$$

Where, n = sample size

p = proportion of previous study

zα/2= degree of precision

d = margin of error

After 10% of the non-response rate was added, a final sample size of 414 was used for the purpose of the study.

Sampling Techniques

The total number of pregnant women in Mattu Town was obtained from the family folder of each kebele. After the sample was allocated to each kebele proportionally based on the size of the pregnant women in each kebele, a simple random sampling method was employed to select eligible pregnant women. Finally, with the help of the health extension workers in each kebele, a unique code was assigned to the houses of the selected women one week before the actual data collection period to facilitate data collection.

Variables of the Study

The outcome variable in this study was sexual violence. The independent variables were maternal age, occupation of the women, occupation of the male partner, maternal educational level, partner educational level, household wealth index, personal characteristics (control of behavior, decision maker of household), substance use (maternal alcohol use, male partner alcohol use, and male partner khat use), and reproductive characteristics (age at marriage, pregnancy status, history of abortion, and stillbirth or neonatal loss).

Operational Definitions and Measurement

Sexual violence: A pregnant woman who practiced sex with her husband without her interest, practiced sex due to fear of what her husband might do, or practiced an unnatural form of sex was considered the victim of the problem. Sexual violence was categorized as "yes" (coded as 1), if at least one of the question were considered to have been sexually violated during their current pregnancies and those who answer "no" (coded as 0) to any of the questions were not violated [24].

Control of behavior: was assessed by asking five questions, and women who responded "yes" to at least one of the questions were considered victims of control of behavior [24].

Pregnancy status: indicate whether the pregnancy was planned or not before conception.

The wealth index is assessed using 38 items to determine the ownership assets of the household and principal component analysis was done. Then it was classified as poor, medium, or rich [25].

Alcohol use was assessed by the history of alcohol use by the study participant or male partner in the past 30 days and classified as never used, one-two per week, two-three per month, or daily [26].

Khat use was assessed by the history of khat use by the male partner in the past 30 days and classified as never used, one-two per week, two-three per month, or daily [26].

Data Collection

A face-to-face interviewer-administered structured questionnaire was used to collect the data. The outcome variable was measured by items developed from related literature [24], that contain three items to assess sexual violence against pregnant mothers. This tool contains three items: practicing sex due to fear of her husband, practicing sex due to fear of what her husband might do, and engaging in an unnatural form of sexual intercourse with a male partner during her current pregnancy. These items were measured by "yes or no" questions. Control of behavior was measured by five questions developed from related literature [24], and the household wealth index was measured by 38 items developed from previous studies to assess the wealth status of the household [25].

Data were collected by six trained health extension workers, who were interchanged for data collection with the kebele data collector to ensure the confidentiality of information. No health extension workers were assigned to the kebeles where they lived. Data collection was supervised by three trained female public health officers. Before data collection, written informed consent was obtained after the participants were informed of the nature and advantages of the study. The interviews were held free from any person to maintain the confidentiality of the information. Women who were victims of the problem were counseled by data collectors and supervisors at the end of data collection to visit nearby health institutions.

DATA QUALITY CONTROL AND ASSURANCE

Before data collection, the tool was translated from English to Afan Oromo, which was then translated into English. To ensure the quality of the data, a pre-test was conducted on 5% of the sample size in Bure Town. Initially, training was given to data collectors and supervisors on the questionnaires and the data collection process. Supervision was held by supervisors daily to ensure the clarity, accuracy, and consistency of the collected data on a daily basis.

Statistical Analysis

All collected data were cross-checked for completeness and consistency, cleaned, coded, and double-entered into Epi-Data 3.1 and exported to SPSS 26 for analysis. Descriptive statistics such as frequency, percentages, and summary measures were calculated, and the results were presented using narrative form and tables. Both the crude odds ratio and adjusted odds ratio with a 95% confidence interval (CI) were calculated to determine the association and strength of the association, respectively.

Variables with a p-value < 0.25 in the binary logistic regression analysis were transferred to multi-variable logistic regression to control for the effect of confounders. Lastly, in multivariable logistic regression analysis, variables with a p-value of < 0.05 were declared statistically significant factors. Model fitness was also checked using the Hosmer-Lemeshow goodness-of-fit test. A multicollinearity test was performed using the variance inflation factor and collinearity statistics, and no multicollinearity was detected. The final results are presented in tables, figures, and narrative forms.

RESULTS

Socio-demographic characteristics of the study participants

In this study, 405 pregnant women participated, with a response rate of 97.83 percent. The mean age and standard deviation of the study participants were 28.50 ± 5.98 SD, respectively. This study revealed that 176 (43.5%) mothers were in the 25–30 age category and 155 (38.8%) mothers were housewives. In addition, 66.9% of the participants' partners were self-employed, while 27.9% were government employees. Regarding educational status, 11.9% and 5.2% of the study participants and their partners, respectively, had no formal education. Furthermore, 69.5% of the study participants had family sizes ranging from four to six, and 37.8% of them were classified as having poor economic status (Table 1).

Personal, Substance use, and Reproductive characteristics of study participants and their partner

Our study identified 64.7% of participants' household decisions as being made by their partners, while only 3.7% decided jointly with their male partners. In addition, 48.6% of them faced behavioral control during their current pregnancy, and 23.7% of the study participants were married before the age of 18. This study revealed that 51.4% of pregnancies were not planned during the current pregnancy, and 18.5% and 2.7% of the study participants had a history of abortion and stillbirth, respectively. Regarding substance use behavior, 12.3% and 0.5% of the study participants had used alcohol one or two times per week and daily, respectively, in the past 30 days. Furthermore, 27.4% and 9.1% of the participants' partners had been daily alcohol and khat users, respectively, in the past 30 days (Table 2).

Prevalence of Sexual Violence among Pregnant women in Mattu town, Southwest Ethiopia, 2023

This study identified that 23.46% (95% CI: 19.31%, 27.90%) of the participants suffered from sexual violence. The study revealed that 66 (16.3%) pregnant women had practiced sex with

Table 1: Socio-demographic characteristics of pregnant women in Mattu town, Southwest Ethiopia, 2023

Variables	Categories	Frequency (n)	Percentage (%)
Maternal Age	18 – 24	83	20.50
	25 – 30	176	43.50
	31 – 35	85	21.00
	36 – 45	61	15.10
Ethnicity	Oromo	380	93.83
	Amhara	16	3.96
	Others*	9	2.21
Maternal Occupation	House wife	155	38.30
	Self-employed	137	33.80
	Government employed	113	27.90
Partner Occupation	Farmer	15	3.70
	Self-employed	271	66.90
	Government employed	119	29.40
Maternal Educational Level	No formal education	48	11.90
	Primary Education	149	36.80
	Secondary Education	95	23.50
	Diploma and above	113	27.90
Partner Educational Level	No formal education	21	5.20
	Primary Education	136	33.60
	Secondary Education	150	37.00
	Diploma and above	98	24.20
Family Size	≤3	124	30.60
	4 to 6	253	62.50
	≥ 7	28	6.90
House Wealth Index	Poor	225	55.56
	Medium	100	24.68
	Rich	80	19.76

Footnote: * Tigre, Gurage, and Agnuak

their male partner without interest due to fear of their husbands. While 29 (7.2%) had practiced sex with their partner during their pregnancy due to fear of what their partner might do during their current pregnancy, 6 (1.5%) of them had practiced an unnatural form of sexual intercourse with their male partner during their current pregnancy (Figure 1).

Factors Associated with Sexual Violence among Pregnant women in Mattu town, Southwest Ethiopia, 2023

This study identified maternal and partner occupation, maternal and partner educational level, maternal age at marriage, pregnancy status, and control of behavior, decision maker of the household, and partner alcohol and khat use as factors significantly associated with sexual violence during pregnancy, with 95% CI at a p-value of less than 0.25 in binary logistic regression. After the effects of possible confounders were controlled by a multivariable logistic regression model, the decision maker of the household, partner educational level, partner khat use, control of behavior, and early marriage were significantly associated with sexual violence at a 95% CI and a p-value of less than 0.05.

The odds of sexual violence among pregnant women whose partner decides the household affairs by themselves was 3.7
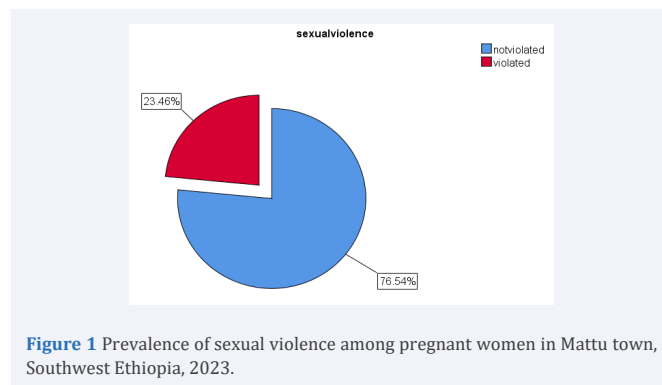

Figure 1 Prevalence of sexual violence among pregnant women in Mattu town, Southwest Ethiopia, 2023.

times higher than that of women who decided independently (aOR = 3.70; 95% CI:1.50, 9.32). In addition, the odds of sexual violence among pregnant women who were exposed to controlled behavior were 8.42 times higher than their counterparts (aOR = 8.42; 95% CI: 4.40, 16.07). Furthermore, the odds of sexual violence among pregnant women whose partners achieved a secondary educational level were 4.11 times higher than those whose partners achieved a diploma or above (aOR = 4.11; 95% CI: 1.25, 13.59), and the odds of sexual violence among pregnant women whose partners used khat daily in the past 30 days were 2.79 times higher than those whose partners never used khat in the past 30 days (aOR = 2.79; 95% CI: 1.16, 6.68). The odds of sexual violence among women in early marriage women were 2.13 times higher than their counterparts (aOR = 2.13; 95% CI: 1.12, 4.08) (Table 3).

DISCUSSIONS

Overall, in this study, nearly a quarter of the pregnant women suffered from sexual violence. We found that early marriage, partner educational level, partner khat use, household decision maker, and control of behavior were significantly associated with sexual violence (p < 0.05).

As it was identified, the prevalence of sexual violence was in line with the study conducted in Debre Markos, Ethiopia (19.8%) [23]; this might be due to the socio-demographic similarity among the study participants. However, this was higher than the findings of a study conducted in Tigray, Ethiopia (15.5%), India (13.8%), and Norway (18.4%) [27-29] . This might be due to the difference in the study setting, as the study conducted in Tigray, Ethiopia, was an institution-based cross-sectional study that might miss violated mothers. The discrepancy between the studies conducted in India and Norway might be due to differences in socio-demographic characteristics among the study participants. Furthermore, this finding was lower than that of a systematic review conducted in Iran (28%) [30], and a study conducted in the Northeast Anatolian Region (29.4%) [31]. This might be due to the difference in socio-demographic characteristics and disclosure of the problem to the data collectors among the study participants, which is culturally taboo in Ethiopia.

We found that early marriage was a significant factor associated with sexual violence during the current pregnancy,

Table 2: Personal, reproductive and substance use characteristics of pregnant women and their partners in Mattu town, Southwest Ethiopia, 2023

Variables	Categories	Frequency (n)	Percentage (%)
Decision Maker of Household	Husband	262	64.70
	Jointly	15	3.70
	Wife	128	31.60
Control of Behavior	No	207	51. 40
	Yes	197	48.60
Maternal Alcohol use	Daily	2	0.50
	One-two per Week	50	12.30
	Two-three per Months	32	7.90
	Never used	321	79.30
Partner Alcohol use	Daily	111	27.40
	One-two per Week	35	8.60
	Two-three per Months	16	4.00
	Never used	243	60.00
Partner Khat Use	Daily	37	9.10
	One-two per Week	21	5.20
	Two-three per Months	36	8.90
	Never used	311	76.80
Age at Marriage	< 18 Years	96	23.70
	≥ 18 Years	309	76.30
Pregnancy Status	Planned	197	48.60
	Not Planned	207	51. 40
History of Abortion	Yes	75	18.50
	No	330	81.50
History of Stillbirth/ Neonatal Loss	Yes	11	2.70
	No	394	97.30

which is supported by the findings of a study conducted in Nepal [32]. This might be due to the lower educational level and understanding of their sexual health because of the discontinuation of their education for the sake of marriage at an early age. In addition, this study revealed that mothers whose partners achieved a secondary education level were more likely to be violated than those whose partners achieved a diploma or a higher level of education. This is supported by the evidence obtained from a study conducted in Sub-Saharan African countries using 18 Demographic Health Survey Data [33]. This might be because partners who achieved a higher level of education had a better understanding of the sexual rights of their wives than those who achieved a lower level of education. Furthermore, those partners who achieved a lower level of education might not pay attention to the interests of their wives during pregnancy, as hormonal and physiological changes during pregnancy may affect women's quality of sexual health and lead to a decrease in sexual desire among pregnant women [34].

Women whose partners were daily khat users were more prone to sexual violence than those whose partners had never used it. This is supported by evidence obtained from a study conducted in the Jimma Zone, Southwest Ethiopia [35]. This might be because khat users might not pay attention to the sexual interests and reproductive health of their wives because of the

Table 3: Factors associated with sexual violence among pregnant women in Mattu town, Southwest Ethiopia, 2023

Variables	Categories	Sexual Violence		cOR (95% CI)	aOR (95% CI)
		Yes (95)	No (310)		
Maternal Occupation	House wife	57	98	3.8 (2.02 - 7.16)	1.50 (0. 60 - 3.72)
	Self-employed	23	114	1.32 (0.65 - 2.67)	0. 65 (0.25 - 1.70)
	Government employed	15	98	1	1
Partner Occupation	Farmer	7	8	1.19 (0.40 - 6.33)	0.24 (0.04 - 1.41)
	Self-employed	76	195	2.50 (1.39 - 4.52)	0. 67 (0.24 - 1.85)
	Government employed	16	103	1	1
Decision Maker of Household	Husband	76	186	3.08 (1.69 - 5.62)	**3.70 (1.50 - 9.32)***
	Jointly	5	10	3.76 (0.77 - 9.70)	3.11 (0.58 - 16.65)
	Wife	15	113	1	1
Maternal Educational Level	No Formal Education	11	37	1.94 (0.82 - 4.61)	0.51 (0.13 - 1.91)
	Primary Education	40	109	2.39 (1.25 - 4.60)	0. 61 (0.21 - 1.81)
	Secondary Education	29	66	2.87 (1.43 - 5.76)	0.95 (0.32 - 2.87)
	Diploma and above	15	98	1	1
Partner Educational Level	No formal Education	5	16	4.06 (1.15 - 14.39)	2. 60 (0.50 - 13.0)
	Primary Education	38	98	5.04 (2.14 - 11.85)	3.21 (0.83 - 12.32)
	Secondary Education	45	105	5.57 (2.39 - 12.96)	**4.11(1.25 - 13.59)***
	Diploma and above	7	91	1	1
Partner Alcohol use	Daily	38	73	2.50 (1.49 - 4.17)	1.51 (0.75 - 3.05)
	One to Two per Week	11	24	2.19 (0.99 - 4.82)	1.51 (0.56 - 4.06)
	Two three per Month	7	9	3.87 (0.49 - 5.19)	1.54 (0.31 - 7.70)
	Never used	42	201	1	1
Partner Khat Use	Daily	15	22	2.73 (1.34 - 5.58)	**2.79 (1.16 - 6.68)***
	One to Two per Week	7	14	2.01 (0.7 - 5.19)	1.83 (0.52 - 6.50)
	Two to Three per Month	11	25	1.77 (0 .83 - 3.78)	1.13 (0.39 - 3.28)
	Never used	62	249	1	1
Age at Marriage	< 18 Years	36	60	2.54 (1.54 - 4.20)	**2.13 (1.12 - 4.08)***
	≥ 18 Years	59	250	1	1
Control of Behavior	No	48	279	1	1
	Yes	47	31	8.81 (5.09 - 15.23)	**8.42(4.40 - 16.07)***
Pregnancy Status	Planned	33	164	2.07 (1.28 - 3.35)	1.46 (0.80 - 2.70)
	Not Planned	61	146	1	1

Footnote:* - significantly associated factors at p-value < 0.05; aOR: Adjusted Odds Ratios; cOR: Crude Odds Ratios, CI: Confidence Interval

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substantial effects of the khat. In addition, those partners might listen only to their sexual interests and emotions rather than their wives [36].

Pregnant women whose partners decided their household affairs by themselves were more likely to face sexual violence than those whose partners decided by them. This is supported by evidence obtained from the Awi Zone, Ethiopia, and Southwest Ethiopia [37,38]. This might be the case with those partners who decide on everything in the household affairs, dominate the power, and impose their power on their wives, which might lead to sexual violence among women with such husbands. Such partners may focus on their own interests and make decisions that worsen sexual violence during pregnancy. Similarly, women whose partners controlled their wives' behavior were more likely to face sexual violence during pregnancy than their counterparts. This is supported by evidence obtained from Eastern Ethiopia [39]. This might be the case for women whose partners control their behavior might suspect their wives or feel jealous, as there might be a change in the sexual interest of women during pregnancy due to the hormonal and physiological effects of pregnancy on their quality of sexual health, and they might show a change in sexual activity and performance during pregnancy.

Strength and Limitation of the study

The strength of this study is that it was a community-based study, which might ease the uncovering of sexually violated pregnant women at the community level. As it is a sensitive issue, it might be prone to social desirability bias, which leads to an underestimation of sexual violence in this population category.

CONCLUSIONS

In general, our study revealed that the prevalence of sexual violence during pregnancy is relatively high. We found that early marriage, partner educational level, household decision maker, partner khat consumption, and partner control of behavior were significantly associated with sexual violence in this study setting. It is better to improve women's decision-making power in their sexual health and life through community education and mass media. In addition, the identification of substance user partners and counseling on the health of their wives might be important to reduce the problem. Furthermore, screenings of pregnant women on sexual violence by community health extension workers and health professionals are of paramount importance in overcoming this problem. Finally, it would be better if it was supported by qualitative research.

ACKNOWLEDGEMENTS

Authors' Contributions

Lema Fikadu Wedajo (LFW) conceived of the study. Lema Fikadu Wedajo (LFW), SSA, and MAT participated in the proposal development, tool development, and data collection process. Lema Fikadu Wedajo (LFW) analyzed the study and wrote the original draft of the manuscript. All authors revised the final version of the manuscript and approved it for publication.

Availability of Data and Materials

The data used for this study are available upon reasonable request from the corresponding author at any time, if required (e-mail: lemafika2014@gmail.com).

Ethical Approval

Ethical clearance was obtained from the Mattu University Institutional Research Review Committee with reference number "MEU/CHS/RERC/091/23," and letters of permission were obtained from the Mattu town Health Department. All methods were performed in accordance with the principles of the Helsinki Declaration. The respondent's name was not used by the questioners, except as a unique code for the purpose of communication, and the collected data were stored safely.

Informed Consent

Written informed consent was obtained from each participant after they understood the nature and benefits of the study.

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